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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
09/937,290	01/02/2002	Andreas Kanitz	P-01,0300	9714	
26574	7590 09/22/2003	•			
SCHIFF H.	SCHIFF HARDIN & WAITE			EXAMINER	
6600 SEARS TOWER 233 S WACKER DR			ROY, SIKHA		
CHICAGO,	CHICAGO, IL 60606-6473		ART UNIT	PAPER NUMBER	
	•		2879		
			DATE MAILED: 09/22/2003	DATE MAILED: 09/22/2003	

Please find below and/or attached an Office communication concerning this application or proceeding.

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	,	Application No.	Applicant(s)
•		09/937,290	KANITZ ET AL.
	Office Action Summary	Examiner	Art Unit
•		Sikha Roy	2879
· Period fo	The MAILING DATE of this communication app or Reply	pears on the cover sheet with the c	orrespondence address
A SH THE - Exte after - If the - If NO - Failu - Any	ORTENED STATUTORY PERIOD FOR REPL'MAILING DATE OF THIS COMMUNICATION. Insions of time may be available under the provisions of 37 CFR 1.1 SIX (6) MONTHS from the mailing date of this communication. In period for reply specified above is less than thirty (30) days, a reply operiod for reply is specified above, the maximum statutory period or reto reply within the set or extended period for reply will, by statute reply received by the Office later than three months after the mailing and patent term adjustment. See 37 CFR 1.704(b).	36(a). In no event, however, may a reply be time y within the statutory minimum of thirty (30) day will apply and will expire SIX (6) MONTHS from the cause the application to become ABANDONE	nely filed s will be considered timely. the mailing date of this communication. D (35 U.S.C. § 133).
3tatus 1)⊠	Responsive to communication(s) filed on 15 3	luly 2003	
اطرا (2a		is action is non-final.	
3)□	Since this application is in condition for allowa		raccourtion as to the morito is
, <u> </u>	closed in accordance with the practice under ion of Claims		
4)⊠	Claim(s) 12-14,17-22 and 25-29 is/are pendin	g in the application.	
	4a) Of the above claim(s) is/are withdraw	wn from consideration.	
5)[Claim(s) is/are allowed.		
6)⊠	Claim(s) <u>12-14,17-22 and 25-29</u> is/are rejected	d.	
7)	Claim(s) is/are objected to.		
8)[Claim(s) are subject to restriction and/o	r election requirement.	
Applicati	on Papers		
9)🖂	The specification is objected to by the Examine	r.	
10)🛛	The drawing(s) filed on <u>15 July 2003</u> is/are: a)∑	☑ accepted or b) ☐ objected to by th	ne Examiner.
	Applicant may not request that any objection to the	• • • • • • • • • • • • • • • • • • • •	` '
11)	The proposed drawing correction filed on	_ is: a)☐ approved b)☐ disappro	eved by the Examiner.
	If approved, corrected drawings are required in rep	ply to this Office action.	
12)	The oath or declaration is objected to by the Ex	aminer.	
Priority ι	ınder 35 U.S.C. §§ 119 and 120		
13)⊠	Acknowledgment is made of a claim for foreign	n priority under 35 U.S.C. § 119(a)-(d) or (f).
a)	⊠ All b) Some * c) None of:		
	1. Certified copies of the priority documents	s have been received.	
	2. Certified copies of the priority documents	s have been received in Applicati	on No
• •	3. Copies of the certified copies of the prior application from the International Bu	reau (PCT Rule 17.2(a)).	<u> </u>
	See the attached detailed Office action for a list	,	
	cknowledgment is made of a claim for domesti	,	
)	* *	
Attachmen		. , ,	
2) 🔲 Notic	e of References Cited (PTO-892) e of Draftsperson's Patent Drawing Review (PTO-948) nation Disclosure Statement(s) (PTO-1449) Paper No(s)	5) Notice of Informal F	(PTO-413) Paper No(s) Patent Application (PTO-152)

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DETAILED ACTION

The Amendment, filed on July 15, 2003 has been entered and is acknowledged by the Examiner.

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Cancellation of claims 15,16 and 23,24 and the new claim 29 have been entered.

Specification

The disclosure in Substitute Specification is objected to because of the following informalities:

Page 10 line 2, 'LiBa₃' should be replaced with -- LiBaF₃--.

Appropriate correction is required.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 12-14,17-22,25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0869701 to Kanai et al.

Regarding claim 29 Kanai discloses (column 3 lines 50-58 Fig. 1) an organic electroluminescent component comprising a substrate 1, transparent bottom electrode 2 arranged on the substrate, a top electrode 5 composed of a metal inert to oxygen and moisture (column 12 lines 15-57) an organic electroluminescent layer 3 between the bottom and top electrodes and a charge carrier injection (cathode interface layer) 4 comprising a complex metal salt (complex halide compound). Kanai further discloses (column 9 lines 46-56, column 11 lines 1-12) the complex metal salt performing a role of improving the adhesion between the cathode and the organic layer and preventing diffusion of the cathode material into the organic fluorescent layer, can be represented by A_pM_qX_r wherein A is one element selected from metal elements of Group 1A and 2A of the Periodic Table, M is at least one element selected from metal elements of Groups 3A and 3B, preferably aluminum, gallium, indium or a lanthanide metal, and as A and M two or more metal elements may respectively be used and X is a halogen atom particularly preferably fluorine and each of p,q and r which are independent of one another is an integer from 1 to 20.

Claim 29 differs from Kanai in that Kanai does not exemplify the nine complex metal salts.

It would have been obvious to one of ordinary skill in the art at the time of invention to substitute in the formula $A_pM_qX_r$ for the charge carrier injection layer of Kanai, with Li (lithium, an element from Group 1A) as A, Al (from Group 3B) as M and Fl as X with p=1, q=1 and r= 4 and obtain the complex salt LiAlF₄. Furthermore it is obvious that the complex metal salts disclosed by Kanai as preferable halide

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compounds having the same compositional formula $A_pM_qX_r$ are chemically equivalent to the claimed nine metal salts with respect to performing the role of improving the adhesion between the cathode and the organic layer and preventing diffusion of the cathode material into the organic fluorescent layer.

Regarding claim 12 Kanai et al. disclose (column 12 lines 48-57) top electrode (cathode) composed of a metal such as aluminum, silver, gold or platinum.

Referring to claims 13 and 21 Kanai et al. disclose (Fig. 1) the charge carrier injection layer (cathode interface layer) 4 is arranged between the top electrode (cathode) 5 and uppermost organic layer 3.

Regarding claims 14 and 22 Kanai et al. disclose (column 11 lines 51-53) the charge carrier injection layer (cathode interface layer) comprising thickness from 0.2 to 20 nm.

Regarding claims 17 and 25 Kanai et al. disclose (Fig. 2) two organic function layers 3a and 3b are arranged between the bottom (anode) electrode 2 and top (cathode) electrode 5, where the conducting layer 3a(hole transport layer) is located on the bottom electrode 2 and a layer 3b containing fluorescent dye is located on the conducting layer.

Regarding claims 18 and 26 Kanai et al. disclose (column 5 lines 9-55) that the conducting layer (hole transport layer) contains a material selected from N'-diphenyl-N, N'-bis(3-methylphenyl)biphenyl, polymer having a triphenylamine structure and the

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emissive layer contains metal complex such as aluminum complex of 8-hydroxyquinoline (Alq₃).

Regarding claims 19 and 27 Kanai et al. disclose (column 1 lines49,50) the bottom electrode (anode) composed of indium tin oxide (ITO).

Regarding claims 20 and 28 Kanai et al. disclose (column 7 lines 32-37) an electron transport layer 3b arranged on the organic hole transport layer.

Response to Arguments

Applicant's arguments filed July 15, 2003 have been fully considered but they are not persuasive. In response to applicants' argument that references do not teach or suggest the nine salts recited in the claim 29 (previous claims 16 and 24) the examiner respectfully disagrees. Kanai et al. discloses (column 9 lines 46-56, column 11 lines 1-12) the complex metal salt can be represented by A_pM_qX_r wherein A is one element selected from metal elements of Group 1A and 2A of the Periodic Table, M is at least one element selected from metal elements of Groups 3A and 3B, preferably aluminum, gallium, indium or a lanthanide metal, and as A and M, two or more metal elements may respectively be used and X is a halogen atom particularly preferably fluorine and each of p, q and r which are independent of one another is an integer from 1 to 20.

It would have been obvious to one of ordinary skill in the art at the time of invention to substitute Li (lithium, an element from Group 1A) as A, Al (from Group 3B) as M and Fl as X with p=1, q=1 and r= 4 in the compositional formula of $A_pM_qX_r$ for the charge carrier injection layer suggested by Kanai and obtain the complex salt LiAlF₄.

The Examiner notes that those nine salts may not be cited in the list of the preferred complex halides compounds of Kanai et al. but they are indeed suggested by Kanai et al. in the general compositional formula $A_pM_qX_r$. Furthermore it is obvious that the complex metal salts disclosed by Kanai as preferable halide compounds having the same compositional formula A_DM_QX_r are chemically equivalent to claimed nine metal salts as they perform the same role as those of the nine claimed salts of improving the adhesion between the cathode and the organic layer and preventing diffusion of the cathode material into the organic fluorescent layer.

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Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (703) 308-2826. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

3.R.

Sikha Roy Patent Examiner Art Unit 2879

ASHOK PATEL
PRIMARY EXAMINED